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ABSTRACT

The latest thinking on reading rate and flexibility is discussed in this paper. Included are highlights of the recently completed reading rate portion of the National Assessment of Educational Progress. The current state of knowledge is assessed and promising research and useful writings in English and Spanish are cited. (Author/WR)

Abstract

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Speed Reading Through a Glass Darkly

IV World Congress on Reading

Buenos Aires, Argentina

1972

Reviews the latest thinking on reading rate and flexibility.

Includes highlights of the recently completed reading rate
portion of the National Assessment of Educational Progress.

Assesses the current state of knowledge and cites promising
research and useful writings in English and Spanish.

SPEED READING THROUGH A GLASS DARKLY

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(Session III - C)

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I stood near a bookcase a few feet away from the table at which Danny was sitting, and I watched him read. His elbows were on the table, and he held his head in the palms of his hands, the fingers covering his ears completely, his eyes staring down at the book. Occasionally, the fingers of his right hand would play with his earlock, and once they stroked the tufts of sand-colored hair on his chin for a few seconds, then went back to the side of his face. His mouth was slightly open, and I could not see his eyes; they were hidden by the lids. He seemed impatient each time he came to the foot of a page, and he flipped the page with a quick gesture of his right hand, wetting the forefinger with his tongue and turning the page by pushing upward with the finger against the lower right-hand corner, the way one does a page of Talmud -- except that with a Talmud the left forefinger usually pushes against the lower left-hand corner because it is read from right to left. He was reading with phenomenal speed. I could almost see him read. He would start at the head of a page, his head tilted slightly upward, and then his head would move downward in a straight line until he got to the foot of the page. Then it would tilt upward again and either move sideways to the right page or remain fixed in its upward position until the page was turned, and then start downward again. He did not seem to be reading from side to side but up and down, and, watching him, I had the distinct impression that he was reading the middle of the page only and was somehow able to ignore, or absorb without actually reading, what was written on the sides.

--from Chaim Potok's bestselling novel,
The Chosen (pp. 143-144).

The absorption of ideas by reading had become for him a curious phenomenon: his eye could grasp in one glance seven to eight lines, with their meaning being apprehended by his spirit with a speed similar to that of his eyes; frequently only one word of the sentence was enough for him to extract the "juice."

-- from Honoré de Balzac's autobiographical
novel, Louis Lambert (p. 30)

The latest attempt to separate fact from fiction in the areas of reading rate and flexibility took place at a session entitled "Speed Reading or Efficient Reading? Directions for the Future" at the National Reading Conference's meeting last December in Tampa. Exchanging views were Ronald P. Carver of the American Institutes for Research, Peter Kump of Evelyn Wood Reading Dynamics, Vearl G. McBride of Culver-Stockton College (Missouri), Florence C. Schale of Northwestern University, and George D. Spache. The session was organized and chaired by Phil Nacke of Jersey City State College.

Carver (5) criticized tests used to measure the comprehension of rapid readers. To illustrate his point, he performed a little study involving the instruments used in the only doctoral dissertation (13) of graduates of the Evelyn Wood Reading Dynamics Program. Completed in 1965, the dissertation found no significant difference in the comprehension of a group of 25 "normal" readers and a group of 25 graduates of the Evelyn Wood program, even though the latter group read at 1,300 words a minute -- three times faster than the control group -- on the post-test. The measurements were based on lengthy passages in a work of fiction and a work of non-fiction: John Steinbeck's The Pearl and Principles of Sociology by Ronald Freedman et al.

In his criticism, Carver compared the results obtained by the two groups with a third newly-formed group which he called clairvoyant readers, to whom he gave these directions:

You are here today to learn a new technique in reading. This technique is called "clairvoyant reading." There are two problems associated with reading as it is done by most mature readers in this the 20th century. One problem is the sheer time involved in reading, and no one ever seems to have enough time. The other problem is the physical one of acquiring the information that you desire to read. That is, one often desires information that exists in a library, such as the Library of Congress, but it takes an extraordinary amount of time to go to the library to acquire the book or the particular information that one needs.

Speed reading courses claim to have solved, for the most part, the time problem involved in reading since they claim that they can teach most anyone to at least triple his reading rate with no decrease in comprehension. However, the problem remains that speed reading seems to require that you have the pages of a book in front of your eyes before you can actually read it. Today I am going to attempt to demonstrate that people can learn to speed read a book that still remains in the library, and the reading will not be skimming. Furthermore, I expect that you can learn to read this way with little loss in comprehension.

Now, imagine yourself in the Library of Congress. You have been given the book entitled The Pearl by John Steinbeck. Imagine yourself turning to the center of the book. When I say "start", imagine yourself turning the pages of the book as fast as you can, reading each page at a single glance. Ready, start.

"At the end of three seconds, the subjects were told to stop and open their eyes. Then, a comprehension test on what they had speed read clairvoyantly was administered. The test questions were exactly the same ones that Liddle used in his research."

Carver continued:

Since you probably have never read clairvoyantly before, and with such speed, I will give you some brief advice about taking the test. You may think that you learned very little while you were reading this time. However, I feel quite sure that you learned something so I hope that you will not simply guess at every answer, and spend a small amount of time trying to reason out your best answer. What you learned clairvoyantly on this first practice reading may be mostly subconscious. Thus, you should give your subconscious the opportunity to guide your answers.

The only way you can do this is by studying each question carefully and then "let your subconscious be your guide." You may be surprised how many answers you can get correctly this way. I will grade your test tonight and tell you how well you did tomorrow.

He gave similar directions to the reading of Principles of Sociology.

The comprehension scores for the three groups are indicated below:

<u>Groups</u>	<u>Comprehension on The Pearl</u>	<u>Comprehension on Principles of Sociology</u>
Normal Readers	82%	72%
Speed Readers	68%	68%
Clairvoyant Readers	51%	57%

Carver discusses these and other matters in Psychology Today (e.g., "Speed Readers Don't Read; They Skim," in Vol. 6, No. 3, August 1972, pp. 22-30).

Carver comments:

Looking at the results...it can be seen that as poor as both tests are, the test on the fiction material is much better than the one on the nonfiction. Notice that the difference between the percent comprehension for the normal readers and the clairvoyant readers is 31 percentage points on The Pearl while the difference on Sociology is only 15 percentage points. Another way of looking at the differences between the two tests is to look at the percent gain in scores due to reading on the two tests. On the test questions for the fiction material, the Normal Readers answered correctly 61% more questions than the Clairvoyant Readers. On the nonfiction material, the Normal Readers answered only 27% more questions than the Clairvoyant Readers. Thus, it should not be too surprising that Liddle (12) did not find a "statistically" significant decrement for the speed readers on Sociology when he was using a "yardstick" that was so crude that it could hardly measure a difference between people who had read the chapter, normally, and people who had not read the chapter at all.

Kump (12) agrees that research is needed to increase the precision of measuring instruments: "We need to explore new methods of testing and measuring to measure and test the new things that are happening in these days when we are doing things which have exceeded physiological limits." He also cites the need for further research on "visual" reading and on the maintenance of skills that have been developed through reading improvement programs. Kump uses the term

"speeded reading" to refer to reading rates of up to "several thousand words per minute."

McBride (16) said that he had taught high school students to read "in French and Spanish at speeds up to 35,000 words a minute." One student was able to read English at 50,000 words a minute. All 19 students could read "at 5,000 or more words a minute in all three languages. All scored 65 percent or better on teacher-prepared tests over different materials written in the three languages." Nine of the students had no prior training in French or Spanish. He reported comparable results with "other classes of a similar nature in junior high, but there was a much greater variance in the comprehension scores." The students read "from 90,000 words a minute in Spanish with 30 percent comprehension to 2,500 words per minute with 85 percent comprehension; and the scores in French were much the same except that the speeds were a little lower."

McBride told of extraordinary successes with exceptionally young people, including a girl who had her fifth birthday "two days before she entered a rapid reading class...." By the time she was five years, six weeks old, she "could read 6,000 words a minute on a second grade level...." In a group of 18 second grade children, "the reading scores from second grade books ranged from 2,248 words a minute with 100 percent comprehension, to 34,788 words per minute with 90 percent comprehension." He said the lowest comprehension score in this particular group was 19,000 words at 40 percent comprehension.

In explaining his technique, McBride indicated that there are many ways to read:

In a current reading class a fourth grade teacher reads across both pages in one sweep -- from right to left. A few seats from her is a school principal, who also teaches kindergarten. She reads the opposite direction, from left to right, but sweeps across both pages without moving her eyes down and up, or up and down. Another member of the class reads up the left hand page and down the right. All read with understanding, the kind we call "book report comprehension."

McBride also claims that there are many ways to hold a book. In a telephone conversation seven years ago, he explained that many rapid readers read with the upper left hand corner of the book pointing toward their stomach. About a year afterwards, in a question-answer period following a presentation at an IRA Convention, McBride demonstrated how one of his most able students read at an astronomical rate by holding a book over his head. There was some discussion as to how fast a person could turn the pages of a book.

Many of McBride's claims were questioned by David Wark of the University of Minnesota when both appeared on a nationwide television program aired by the National Broadcasting Company (June 1971).

Schale (24) described a rapid reading series that she prepared for Columbia Broadcasting System, which she indicates was telecast in Chicago in Fall, 1970, and in Los Angeles, New York, Philadelphia, St. Louis and again in Chicago in the Summer, 1971. The purpose of the series was "to motivate and instruct a general ... audience in reading and skimming nonfictional materials of grades 5-9 reading level equivalencies at rates up to 1,000 words per minute with good comprehension." Schale claims "three technological firsts ... both for the fields of television and reading." These include the following:

- (1) circular tachistoscopic spans - (increasingly larger spans of words were flashed on the television screens at rates up to 1/50 second);
- (2) paragraph timed exposure-(projecting whole paragraphs, instead of line by line exposure, gradually decreasing the number of seconds each paragraph was exposed);
- (3) stretch-reading techniques - (accelerating the rates of reading during an article and then dropping back to a less frenetic pace for comfort and stabilization).

The television series also featured guests including Donald L. Cleland, past president, International Reading Association, and a number of other specialists outside the field of reading education. Schale comments upon the audience reaction

to the series, noting that "the change to reading paragraphs at flexible rates received the most favorable comment."

In an earlier paper, Schale described three rapid reader (26) and, more recently, she reported a "preliminary study" to investigate "the page-at-a-glance reading phenomenon in two gifted rapid readers who used only monocular vision...." (25) One was a 15-year-old girl from the Philippines, the other a 12-year-old from the United States. The student from the Philippines, Schale notes, scanned "The Devil and Daniel Webster," a 6,000 word "eighth grade article, in 4.45 seconds -- at a rate of 80,000 wpm. Not only could she perceive all the words on the seven by nine inches of print on each page, but ... she absorbed both of the double columns per page simultaneously, averaging one fixation per page." She attained 100 percent on the ten comprehension questions. The student from the U.S. scanned "It's Not Too Late to Read," a 4,204 word "fourteenth-grade article, in 4.6 seconds. She therefore attained a rate of 54,825 wpm with 90 percent comprehension on the ten questions.... She, too, grasped both columns of a page in one vertical fixation, focussing her right eye near the center of the page." Schale reports that eye movements were recorded by equipment from the Department of Otolaryngology at the Illinois Eye and Ear Infirmary.

Nacke (17), in his introductory remarks, cited problems relating to "definitions" and "measurement." He suggested language redundancy* as an area of research which may yield promising results, elaborating on this suggestion elsewhere. (2) His review of research on reading flexibility appears in a paper (18) presented the

* Language redundancy is "the difference between the theoretical capacity of any code and the average amount of information conveyed.... Redundancy is not synonymous with repetition...." (H.A. Gleason Jr., An Introduction to Descriptive Linguistics. New York: Holt, Rinehart and Winston, 1961, p. 379.) English and Spanish have high redundancy levels.

perceding year at the National Reading Conference.

Spache, in his summary comments, criticized "exotic interpretations of the act of reading."

Reading is dealing with language. Each language has a typical structure in which words are used with certain functions. In each language, the word functions have become stabilized in positions with respect to each other. For example, in English, adjectives precede the noun they describe, while in Spanish, and often in French, adjectives tend to follow the noun. Similarly, sentences are arranged in planned order in paragraphs. To speak of dealing with these structures in any other than the normal is nonsense. It would be like claiming to comprehend the music on a tape played in reverse, or listening to a conversation in jumbled order.

Other Studies

Promising research on reading flexibility is being directed by Earl F. Rankin at the University of Kentucky. His most recent work deals with intra-article reading flexibility. (22)

Other promising work in the area of rate and flexibility is that of Martha Maxwell at the University of California, Berkeley. Last March, she presented a model incorporating extrinsic and intrinsic factors underlying skimming (14). Another interesting reading model, incidentally, was recently presented by Edmund Zazzera (32). In April, Maxwell proposed a three-step procedure to describe and analyze the cognitive aspects of "skimming or high speed reading." (15). Called skapa (which she indicates is from a Swedish word which means to create), the three steps involve the following. The reader:

- (1) selects and reports word clues from a passage;
- (2) categorizes these clues -- labeling or titling them;
- (3) summarizes the main idea of the passage based on the clues and labels.

She describes each step in detail and suggests the potential value of skapa in investigating reading and thinking processes.

Other recent studies of interest include those completed by Bruland (3), Calfee and Jameson (4), Donk (8), Green (9), Harris (10), Johnson (11), Sticht (29), Tsukerman (30), and Whitman (31). For two sources containing further relevant references, the reader is invited to the revised IRA Annotated Bibliography on Speed Reading (1970) with more than 150 references, mostly research, and to a comprehensive article, with 98 references, entitled "Speed Reading: Is the Present Emphasis Desirable?" in Nila Banton Smith (Ed.), Current Issues in Reading (Proceedings of the Thirteenth Annual Convention of the International Reading Association), Vol. 13, Part 2 (1969), 45-70. The paper is one of 17 major papers presented under the direction of Dr. Smith at the IRA Convention in Boston. Immediately following, the reader will find two shorter papers -- by Vearl G. McBride and M. Agnella Gunn, respectively, for and against the topic.

National Assessment

The recently completed reading rate survey (23), a part of the National Assessment of Educational Progress, involved four age levels (nine-year-olds, 13-year-olds, 17-year-olds and young adults), four regions of the U.S. (Northeast, Southeast, Central, West), with additional information relating to sex, race, parental education, size and type of community. People at each age level read two passages. Space limitations permit only the essence of the findings at each level.

Reading Rate for 9-Year-Olds: Passage One - "Elmer and the Dragon"

The results of the exercises assessing reading rate indicate the 9-year-olds in the upper quartile (75th percentile) read 160 words per minute, and 9-year-olds in the lower quartile (25th percentile) read 86 words per minute. The median reading rate for 9-year-olds was 117 words per minute. The range of reading rates on this passage was 0 to 570 words per minute. Slightly more than a third of the respondents read less than 100 words per minute, more than half read between 100 and 200 words per minute and very few (less than 5%) read at a rate of 250 words per minute or more. (p. 1)

Similar results were obtained on the second passage read by the nine-year-olds.

Reading Rate for 13-Year-Olds: Passage One - "An Expensive Experiment"

The results on the first passage for age 13 show an increase in reading rate over the 9-year-olds. The 13-year-olds in the upper quartile (75th percentile) read 217 words per minute and the 13-year-olds in the lower quartile (25th percentile) read 133 words per minute. The median reading rate for 13-year-olds was 173 words per minute.

Only about 10% of the students read at less than 100 words per minute, slightly over half read between 100 and 200 words per minute and only about 5% read at a rate of 300 words per minute or greater. The range of reading rates ran from 0 to 701. (p. 56)

Similar results were obtained on the second passage read by the 13-year-olds.

Reading Rate for 17-Year-Olds and Young Adults: Passage One - "How to Bug a Mosquito"

Again, the results of the 17-year-olds and the young adults (ages 26-35) show an increase in reading rate over the younger ages (ages 9 and 13). The 17-year-olds in the upper quartile (75th percentile) read 237 words per minute and the 17-year-olds in the lower quartile (25th percentile) read 155 words per minute. The median reading rate for the 17-year-olds was 193 words per minute.

The results for the young adults are slightly lower than those for age 17. The young adults in the upper quartile (75th percentile) read 232 words per minute and the young adults in the lower quartile (25th percentile) read 145 words per minute. The median reading rate for young adults was 188 words per minute.

Only about 5% of the 17-year-olds and less than 10% of the young adults read at rates less than 100 words per minute. About 40% of the 17-year-olds and slightly less than 50% of the young adults read between 100 and 200 words per minute. For both 17-year-olds and young adults, about 5% of the respondents read more than 325 words per minute. The range of rates ran from 0 to 1039 words per minute for 17-year-olds and from 0 to 536 words per minute for young adults. (p. 104)

Comparable results were obtained on the second passage read by the 17-year-olds and young adults. The extremely rapid readers at each level "will be discussed in a later report."

The greatest significance of the 1970-71 reading study, which involved nearly 100,000 participants, "is that it provides the first solid baseline data ever collected on the reading skills, ...of young Americans.... The next round of tests, to be made in 1975, will permit comparisons over time." (20)

State of Knowledge

The current state of knowledge about reading rate and flexibility makes it impossible to separate fact from fiction. On the state of knowledge about reading in general, the reader might wish to consult the recently-completed review of 1,855 documents culled from a list of over 15,000 appearing in the literature between 1960 and 1970 (7).

The writers cited earlier have identified relevant areas of needed research relating to rate and flexibility (e.g., definitions, measurement, "visual" reading, language redundancy). They, and other writers, like Coleman and Miller (6) and Scriven (28), have expressed interesting ideas relating to the concept of measurement and other aspects of educational research. Relating to the concept of language redundancy, Smith and Holmes (27) have observed:

Even the fastest reader is limited to about four fixations a second, which is the rate achieved by fourth graders. What distinguishes the skilled reader from the novice ... is not ... the amount of visual information that he can pack into a single fixation, but the amount of nonvisual information with which he can leaven the featural input and make it go the furthest.

They further note:

... the response of the skilled reader to material which is unfamiliar or opaque is precisely that of the tyro with "easy" material - his "span of apprehension" decreases as he is reduced to word identification ... rather than meaning identification. "Tunnel vision" in reading is not so much that the visual system is overloaded as that the visual information cannot be supplemented by redundancy.

They conclude:

Many skilled readers can scan for meaning much faster than 1000 words per minute -- a speed four times faster than the rate at which individual words can be identified. Yet the common "explanation" that the speed reader only reads "one word in four" cannot hold. A simple test will show that a passage in which three words out of four are erased is completely unintelligible. Far more efficient (and feasible) would be a system that instead of identifying one word in four would sample meaning information from most words. (pp. 410-12)

Neisser (19) questions the concept of language redundancy to explain rapid reading. "Such an account of reading for meaning leaves something to be desired," he writes. "It suggests that a reader sees half the words on the page and infers the others.... But rapid reading is no more limited to 1200 or 600 words a minute than to 300." He discusses the similarities "between reading sentences without attending to specific words and recognizing words without attending to specific letters," pointing out differences where rapid reading is concerned.

The end product of cognitive activity is not a bit of verbal behavior but a deep cognitive structure; not a verbalized name but a continuing silent stream of thought. Reading for meaning seems to be a kind of analysis-by-synthesis, a construction which builds a non-sensory structure.... Reading is externally guided thinking. Perhaps we should not be so surprised that it is so poorly understood; we may not understand it until we understand thought itself.

In rapid reading, we attain a meaning without identifying individual words. In this respect it bears some resemblance to subception.... [However,] the conditions of subception are diametrically opposed to those which facilitate rapid reading. Brief, dim exposures lead to subception because they interfere with accurate identification, but they do not lead to rapid reading. In reading for meaning, we continuously take account of new constellations of words to construct novel

thought processes. In subception, on the other hand, a familiar but indistinct constellation of letters leads to the verbal representation of an entirely familiar word.... Finally, the results of the subception experiments can easily be explained without leaving the framework of visual synthesis and verbal memory, while the existence of rapid reading apparently cannot be understood within this frame reference at all.

Until some understanding of reading for meaning is achieved, we will remain embarrassingly ignorant about questions that appear superficially easy. How fast is it possible to read? However dubious we may be about the extravagant claims of reading-improvement courses, we cannot refute them. Indeed, we cannot even define "reading" (as distinguished from "skipping," for example), let alone set a maximum to its speed.... For the present rapid reading represents an achievement as impossible in theory as is commonplace in practice. (pp. 135-37)

In searching for greater knowledge about reading rate and flexibility, it might be good to pause a moment on one sentence in The Chosen. Toward the very end of the novel, Danny's father, a great scholar who had led a community of Hasidic Jews to New York City, is speaking to Danny's friend, Reuven Málter. He speaks to Reuven's father, a teacher and writer:

In your father's writings I looked at his soul, not his mind.
(p. 267)

That sentence opens up a whole new realm for imaginative exploration.

Post Script: During the interval between my arrival in Buenos Aires and the commencement of the IV World Congress on Reading, I had the good fortune, while browsing in book stores, to find a number of books dealing with reading which, I think, are largely unknown to the English-speaking world. Four of the books are quite extraordinary and useful to those interested in reading rate and flexibility. One is title La Enseñanza de la Lectura por el Metodo Global; it first appeared in 1939 in Belgium under the title La Psychologie de la Lecture; at the time of writing this scholarly work, which contains 389 research

references from all parts of the world, J.E. Segers was a clinical psychologist at the Free University of Brussels. (The third Spanish edition was published in 1958 by Editorial Kapelusz, Moreno 372, Buenos Aires.)

While Segers' 298-page book provides important information relating to the reading process, the three other books focus more directly on "speed reading." One is Leer Mejor y Más Rápido by Wolfgang Zielke; it first appeared in Germany and was published about five years ago in Spain. Also published in Spain is Lectura Rápida by Antonio Blay Fontcuberta; his book attends to perception, comprehension, and application of techniques and includes some useful references (in particular one to François Richaudeau). The remaining book deals with visual and auditory perception and includes a fascinating historical array of relevant references (including St. Augustine's amazement at witnessing someone reading silently as is described in his Confessions). Entitled ¿Qué es la Llamada 'Lectura Veloz'? (What is the So-Called 'Speed Reading?'), the book was written by Jorge A. Bisbini in collaboration with Enrique F. Savransky. Among other things the authors discuss the threshold of visual acuity, or sharpness, as related to recognition span in rapid reading. They distinguish between relative and absolute visual "sharpness," the former being susceptible to improvement mainly through educational factors (the reader's agility in word recognition, context clues, etc.) and the latter mainly through physiological and environmental factors (vision, binocular convergence, illumination, etc.). They write:

...every general increase in the absolute sharpness with which an individual perceives a definite text implies a reduction of the threshold of relative sharpness in reading. In fact, such a general increase includes the growing of maximum sharpness of the visual field, while the minimum absolute sharpness remains unchanged. Consequently, this minimum value becomes a lower percent of that maximum sharpness, which is the same as to say that the threshold has been reduced. (p. 201)

The 246-page book was published in 1971 by Enriques Pantós (Corrientes 1515, piso 4, "D," Buenos Aires, Argentina).

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